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Contents

FOREWORD 4
SUMMARY AND CONCLUSIONS 5
INTRODUCTION 7
PURPOSE OF STUDY 7
PROCEDURE 7
DESCRIPTION OF RETAIL FOOD STORES IN THE NORTHEAST 9
QUALITY AND SIZE OF EGGS 12
Quality of Eggs Sold 12
Quality Claims Compared with Quality Found 12
Size of Eggs Sold 15
GROSS MARGINS ON EGGS IN RETAIL STORES OF THE NORTHEAST 16
Differences Among Types of Stores 16
GROSS MARGINS ON DIFFERENT SIZES OF EGGS 18
SOME MARKETING FUNCTIONS AND PRACTICES OF RETAILERS 19
Egg-Marketing Operations in the Store 19
Cartons Available to Customers 19
TYPES OF SUPPLIERS AND DELIVERIES 23
EGG REFRIGERATION IN RETAIL STORES 26
RETAILERS' RESPONSE TO WEIGHT STANDARDS IN GRADE REQUIREMENTS 28
PRICE 30
SOME FACTORS STUDIED IN RELATION TO EGG SALES 31
Egg Advertising 31
Customer Choice 31
USE OF BRANDS ON EGGS 34
Poultry Products Available in Stores 34
APPENDIX 36

Foreword

This is a report of subproject 10 of the Northeastern Regional Poultry Marketing Project NEM-5 entitled "Factors Influencing the Quality of Eggs Marketed in the Northeast." The objective of this subproject is to study the merchandising practices in marketing eggs in retail stores, to describe these and where feasible relate them to egg quality and egg sales. There also is an immediate objective of furnishing information basic to more detailed research into both merchandising and quality problems.

Funds from various sources have been used for the work, but the regional aspects were made possible through the financial support and authority of the Research and Marketing Act of 1946.

States cooperating and leaders were:

Connecticut—Richard A. King and Stanley K. Seaver
Delaware—S. T. Rice
Maine—Charles H. Merchant and Willard Savage
Maryland—James Gwin and Paul Poffenberger
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New York—L. B. Darrah
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Rhode Island—John L. Tennant
West Virginia—Norman Nybroten

Records for New Hampshire, Vermont, New Jersey, Boston and New York City were obtained under the supervision of Hermon I. Miller and Earl H. Rinear, Production and Marketing Administration. Louis F. Herrmann and Earle Houseman represented the Bureau of Agricultural Economics. John J. Scanlan represented the Farm Credit Administration.

Regional Administrative Adviser, W. B. Kemp, Maryland, represented the Committee of Nine.

Norman Nybroten, *Project Leader*
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Summary and Conclusions

About seven-eighths of the stores had shell eggs on hand. Actually, about one-tenth of the food stores usually did not sell eggs. Less than 2 per cent of the stores had dried eggs on hand.

The stores that sold eggs averaged 93 dozen of sales the week prior to the interview. The volume of egg sales varied greatly among stores of different sizes and also among stores of approximately the same size. Independent stores and voluntary chain stores were fairly similar in their operations as well as in egg volume—independents averaged 66 dozen and voluntary chains averaged 65 dozen. Chain stores averaged 309 dozen the week prior to the interview, with about two-thirds of these stores selling 105 dozen or more. Of the complete food stores and grocery stores that had gross sales between $2,500 and $4,999 the previous week, those that were located in places with populations of less than 25,000 averaged 141 dozen, whereas those in cities of 25,000 or more averaged 482 dozen. Generally, the larger stores in the larger cities sold more eggs per dollar of gross sales.

About 70 per cent of all the individual eggs examined were found to be of grade A or AA quality when judged by Federal standards. Generally, there was very little difference between the eggs in stores claiming to sell grade A or AA and the eggs in stores not making such claims. A great majority of these claims were merely oral claims and not based on any government standard. When the claims were matched against Federal standards, about three-fifths of the eggs were of a quality lower than that claimed for them. Eggs in New England stores were of better quality than those in stores in the rest of the Northeast.

Over one-third of the eggs sampled in the Northeast were found to be Extra Large or Jumbo according to Federal standards. In New England the eggs were smaller than average, as only about one-sixth of them were Extra Large or Jumbo. In the Northeast, less than one-twelfth of the eggs were below Medium in size. In their claims for eggs of stated size, the retailers came considerably closer on the basis of the Federal dozen-weight standard than on the Federal individual-egg-weight standard.

The gross margins received by retail stores varied from 0 to 25 cents a dozen. Independent stores and voluntary chains were also alike in this respect, averaging 9.5 cents and 9.6 cents per dozen respectively. The margins generally increased with the size of the eggs, with a larger premium for size in New England than in the rest of the Northeast. New England eggs averaged smaller than in the rest of the Northeast.

Almost two-fifths of the stores sold at least some of their eggs in paper bags. Nearly one-fifth (18.4 per cent) of the eggs were sold in paper bags. Although more stores used the "square" carton than the "long" carton, over 50 per cent of the eggs were sold in the long carton compared with 30 per cent in the square carton. Nearly all the eggs handled by chain store warehouses were retailed in the "long" carton. On the eggs that had come to the store directly from farmers or farmers' markets, about one-seventh were in dozen cartons at the time they reached the store and about 41 per cent were retailed in paper bags. About one-third of the different egg lots had been obtained directly from farmers or farmers' markets.

About one-half of the grocery stores received eggs twice a week or more often, whereas nearly two thirds of both complete food stores and general merchandise stores received them that frequently. One-eighth of the complete food stores received eggs more often than three times a week.

Of all the egg lots sampled, 57 per cent were kept under refrigeration. Refrigeration was more common in complete food stores and meat markets than in other types of stores retailing eggs. When they were kept under constant refrigeration, eggs that had been held in the store for several days were of a quality approximately equal to those that had been there only a day or two. However, the average quality, as determined by candling, of eggs held at room temperature was higher than those held under refrigeration. Since eggs held at room temperature deteriorated rapidly, it is evident that eggs of poorer quality were put under refrigeration in the stores.

Although non-display refrigeration did not assure better eggs to the customer, better eggs were being offered in displays in which eggs were refrigerated. This was true whether or not eggs had been refrigerated in non-display and displayed at room temperature. It appears that the application of refrigeration to eggs in retail stores warrants further study—especially study that would control the quality of and practices affecting eggs entering refrigeration.

Introduction

Although eggs have long been a common item in food stores, the way they are handled varies widely from store to store. Eggs in a retail store may have come from neighbors' hen houses — even from the retailer's own hen houses in some instances — or they may have traveled hundreds of miles through several marketing agencies. They may be "run-of-the-nest" or they may have been sorted and graded on several bases before they reach the store. Some stores receive eggs daily, while some receive them only every two weeks. Some stores keep eggs under constant refrigeration, whereas others keep them at room temperatures. These variations probably influence egg sales and the quality of eggs available to consumers of the Northeast.

Purpose of Study

The general purpose of this study was to describe the kind and quality of eggs sold through retail stores and the handling methods and practices used by retailers in the Northeast. An attempt was made to relate retailers' methods and practices to egg sales, prices and margins, type and location of stores, and nature of eggs being offered. A further purpose was to furnish basic information for additional research into consumer preferences and the maintenance of egg quality at retail levels. However, it was intended that most of the cause-effect relationships should be left to more intensive studies.

Procedure

In July, August, and September, 1949, a survey was made of approximately four thousand retail stores in the Northeast. This area embraces twelve states: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, Maryland, Delaware, and West Virginia. The stores were selected in such a manner as to represent all the retail food stores of the region. Either the manager or some other responsible employee was interviewed, with the aid of a questionnaire, in each of these stores. Data were obtained on merchandising practices, type of store, products handled, problems in egg marketing, sources of egg supply, prices and margins, egg quality, and other factors having probable bearing on the purposes of the study.

Table 1 shows the number of sample stores that were studied in each of the twelve states of the Northeast. A quota was set for each of the states and each state leader assumed the responsibility of sampling in his state a proportionate share of the 1,500-store sample. In some

TABLE 1. NUMBER OF STORES IN PROPOSED AND ACTUAL SAMPLE BY STATES

STATE	QUOTA FOR A 1,500-STORE SAMPLE	NUMBER OF STORES ACTUALLY STUDIED*
NEW ENGLAND STATES		
Maine	31	664
New Hampshire	16	12
Vermont	12	12
Massachusetts	147	88
Rhode Island	24	65
Connecticut	57	56
OTHER NORTHEAST STATES		
New York	520	1,306
New Jersey	174	153
Pennsylvania	385	835
Delaware	10	82
Maryland	71	81
West Virginia	53	553
Total	1,500	3,907

*Using the larger number of stores brought about a disproportional sample so far as State quotas were concerned. In data likely to be significantly affected by this disproportionality in the sampling, in the judgment of the project leader, the state samples were statistically weighted to eliminate the distortion that might have come about because of relative over-sampling. Note that the greatest over-sampling was in Maine, New York, Pennsylvania, and West Virginia, which formed a southwest-northeast axis through the Northeast region. In some of the factors studied, those logically not affected territorially, the weighting procedure was not used but usually the results were compared with the results from the quota sample and if results differed appreciably the weighting was done. This study did not have as its purpose that of studying differences among states or smaller areas.

instances the state leaders increased their sampling beyond the assigned quota for their respective states. This enabled them to prepare separate state analyses and state reports. Consequently, data from 3,907 retail food stores were made available for regional analysis. Although the states were severally sampled at different rates, an adjustment was generally made by giving each state its appropriate weight in arriving at regional averages.

A sample of the eggs from each lot offered for sale in these stores was inspected and graded as to size, quality, and color by trained egg graders. Some of the graders were furnished by state departments of agriculture, some by the United States Department of Agriculture, and some were specially trained for this study. At least twelve eggs were graded from each lot that was offered for sale. In some of the states at least twenty-four eggs were graded. If, for any reason, part of the eggs appeared to the customer as a different offering for sale, they

were treated as a separate lot in the study. This distinction may have been due to difference in grade, color, size, cartoning, brand, or other factor discernible to the customer.

"Previous week" is used to mean the full week prior to the interviewer's visit to the store.

Most stores did not have actual records of egg sales. In these stores, the manager was asked to estimate his egg sales for the previous week, and these estimates were used in this report.

The term "New England," as used in this report, embraces the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, and Connecticut, as distinguished from the term "Northeast" which is used for all of the twelve states in the region.

Description of Retail Food Stores in the Northeast

Stores in the sample varied considerably in size from the small part-time stores in residences to large supermarkets. The survey attempted to include all the stores in the designated sampling areas. Thus, all sizes should be represented in proportion to the actual numbers in existence. Although the large supermarkets are prevalent in the Northeast states, they are relatively scarce in number compared with the small stores. Over one-fourth of the stores classed as complete food stores or groceries reported less than $500 gross volume "previous week" and over three-fourths reported less than $1,500.

Field workers, upon consultation with the retailer, classified each store on three bases: the products handled, the service given to customers, and whether and how the retail store was affiliated with other stores or a wholesale organization.

The retailer was asked whether the store was a chain store, a "voluntary chain" — independent except that it had rather definite agreements with and sponsorship from a wholesale organization that had agreements with other retail outlets — or completely independent of other stores or wholesale organizations. Table 2 shows that of 3,253 stores for which information on egg volume "previous week" was obtained, 2,515 stores were classed as independent, 363 as voluntary chain, and 375 as chain stores. The independents averaged 66 dozen eggs sold "previous week," the voluntary chains 65 dozen, and chain stores 309 dozen. The over-all average was 93 dozen.

Information also was obtained as to whether a store was of the self-service, semi-self-service, or complete counter service type. Further information was obtained on the services related to eggs. In the instructions issued to field workers it was recognized that classifying a

Table 2. Variation in Volume of Eggs Sold "Previous Week" by Type of Store

Dozen Eggs Sold "Previous Week"	Type of Store			
	Independent	Voluntary Chain	Corporate Chain	All Stores
	Per Cent	Per Cent	Per Cent	Per Cent
Less than 15	12	4	1	10
15-44	46	40	9	41
45-74	21	31	16	21
75-104	9	12	9	10
105 and over	12	13	65	18
Number of Stores	2,515	363	375	3,253
Average volume	66	65	309	93

store on the basis of its service would necessarily be somewhat arbitrary. In these instructions, it was stated that "even though meats, some vegetables, and small items near the checkout are available only through clerks we will still call the store self-service." Further, that "if in doubt about whether a store is semi-self-service or complete counter service, use the retailer's classification."

Field workers also were asked to classify stores on the basis of the products or groups of products handled. The classes given were complete food, dairy products, delicatessen, fruits and vegetables, general merchandise, grocery, meat market, and "other" to be written into the field schedule. Over one-half of the egg lots studied were in complete food stores and over one-fourth were in groceries.

Although the difference between the stores classed as "complete food" and "grocery" must necessarily be quite arbitrary, the average complete food store did about two and one-half times as much business as the average grocery. Table 3 indicates that the average volume of eggs sold by complete food and grocery stores studied in the week prior to the interview was 74 dozen. This is considerably below the average of 93 dozen for all types of stores. In complete food and grocery stores reporting less than $500 gross sales "previous week," the average was only 25 dozen. In stores that grossed from $500 to $1,499, the average was 50 dozen. As would be expected, stores that sold more of other items also sold more eggs. Complete food and grocery stores that had gross volumes between $2,500 and $4,999 "previous week" averaged 225 dozen eggs sold.

The volume of egg sales of a store was directly related to the size of the city in which it was located. This excludes the very small stores of less than $500 gross. These seemed to do about the same regardless of city size. Larger stores in larger cities not only sold more eggs but

Table 3. Egg Sales "Previous Week" of Complete Food Stores and Groceries by Gross Dollar Volume and Size of City in Which the Store is Located

Stores With Given Gross Sales "Previous Week"	Population of the Place in Which the Store is Located							
	Less Than 5,000		5,000 to 24,999		25,000 and over		Northeast	
	Av. No. of Dozen per Store	Av. No. of Dozen per $100 Gross Sales	Av. No. of Dozen per Store	Av. No. of Dozen per $100 Gross Sales	Av. No. of Dozen per Store	Av. No. of Dozen per $100 Gross Sales	Av. No. of Dozen per Store	Av. No. of Dozen per $100 Gross Sales
Under $500	24	8.2	25	8.1	25	8.3	25	8.2
$500-$1,499	41	4.5	48	5.5	52	6.2	50	5.8
$1,500-$2,499	115	5.7	128	6.2	225	12.2	189	9.9
$2,500-$4,999	141	3.8	195	6.6	482	13.5	225	6.7
Over $5,000	117	1.2	462	5.1	699	9.9	582	7.4
All Stores	56	4.5	74	6.0	77	8.6	74	7.5

accounted for more of the total business through egg sales. In cities under 5,000 these stores averaged 4.5 dozen eggs per $100 gross sales; in cities of 5,000 to 24,999 the average was 6 dozen; and in cities of 25,000 and over the average was 8.6 dozen. When only the larger stores are taken into consideration this becomes even more pronounced. For example, stores that grossed between $2,500 and $4,999 averaged only 141 dozen for stores in places of less than 5,000, whereas stores in this size class located in cities of 25,000 or more averaged 482 dozen eggs sold during the week.

Of 2,870 lots for which retailers' statements on source of supply were obtained, 59 per cent were reported to have been produced "nearby." Four per cent were reported to have come from outside the Northeast; but since the average size of these lots may have been different from the size of the other lots, it does not follow that this closely represents the percentage of eggs that had come from outside the Northeast. About one-fifth of the lots had been procured out-of-state but within the Northeast. The remainder of the eggs were claimed to be from within the state but not necessarily nearby.

Quality and Size of Eggs

Quality of Eggs Sold

Table 4 shows that about 70 per cent of the eggs in the lots sampled (in 3,266 stores having eggs on hand) were found to be grade A or better.[1] About one-fifth of the eggs were of grade B quality, and about 3 per cent were grade C. Less than 5 per cent graded below C when cleanliness of shell was not taken into consideration. Had shell cleanliness been taken into consideration 7 per cent would have graded below C. Cracked shells caused many eggs to be graded below C.

The quality differed between New England and the rest of the region. In New England, more than 80 per cent of the individual eggs tested were grade A compared with slightly more than 65 per cent in the rest of the region. The percentage of grade AA was about twice as high in New England as in the rest of the Northeast. Less than 3 per cent of the eggs in New England were below grade C as compared with about 5 per cent in the rest of the Northeast.

Quality Claimed Compared with Quality Found

About two-thirds of the stores claimed to sell eggs of grade A or better quality. These claims were not necessarily based on either Federal or state standards. Often the claims were only of an oral nature.

[1]This was based on the quality determination of each individual egg in the sample.

Table 4. Quality of Eggs Offered for Sale in New England Stores Compared with the Rest of the Northeast and All of the Northeast* and Quality in Retail Stores Claiming to Sell Grade A or Better Compared with that in Stores Not Making Such Claims

Egg Grade for Individual Egg on Federal Standards	Per Cent of All Eggs at Retail Point				
	New England Stores	Northeast Other Than New England	Entire Northeast		
			In Lots Claimed to Be Grade A or Better	In Lots Not Claimed to Be Grade A or Better	All Eggs in All Stores Sampled
AA	21.1	11.2	14.3	12.2	13.4
A	62.3	56.5	57.4	58.4	57.8
B	10.3	25.2	21.5	21.7	21.9
C	3.4	2.4	2.2	3.5	2.6
Checks	2.6	4.0	3.9	3.4	3.7
Leakers	.1	.3	.4	.4	.3
Loss	.2	.4	.3	.4	.3

*Eggs that ordinarily would be classed as "Dirties" or "Stains" because of unclean shells have not been segregated in this table. However, about 7 per cent of all graded eggs in the Northeast were found in these two classes.

The claims might have been based on rigid standards or merely the retailers' statements.

The sample of eggs from stores that offered only one lot or class of eggs for sale contained 68 per cent grade A or better compared with 69 per cent for all stores. The one-lot stores that claimed to sell grade A or better actually had a slightly smaller percentage of grade A or better than did the stores not making such claims for quality. Approximately the same percentage of eggs (about 92 per cent) were grade B or better in stores making claims for quality and in those not making claims. Table 4 shows that regardless of how many lots or offerings a store had of the individual eggs in the lots claimed to be grade A or better, 71.7 per cent actually were grade A or better compared with 70.6 per cent of the eggs in the lots for which such quality claims were not made. Actually, there was very little difference in the quality of eggs in the two groups of stores. However, indications are that eggs that contained meat spots and blood spots were more prevalent in stores that did not make claims for quality. The two groups of stores had about the same percentage of unclean eggs — the two classes of "stains" and "dirties" totaled about 7 per cent.

The 4,277 lots of eggs reported in Table 5 include those from all stores regardless of how many classes of eggs they offered. Over one-eighth of all the lots were below grade C.[2] The retailers who stated that they were receiving either B or C, or below C grade eggs, actually had about one-sixth of their eggs below grade C. This did not differ

Table 5. Comparison of Quality Claimed for Eggs with Actual Quality Sold in 4,277 Lots of Eggs

City Size and Grades Retailers Stated They Were Receiving	U. S. Consumer Grades of Sample Egg Lots As Determined by Inspectors			
	AA or A	B	C	Below C
	Per Cent of Total			
New York City				
AA or A	43.2	41.4	8.7	6.7
B or C	12.5	56.2	25.0	6.3
Below C	*	*	*	*
Ungraded	*	*	*	*
Total	41.4	42.7	9.3	6.6
100,000 & over†				
AA or A	16.3	44.5	20.3	18.9
B or C	7.7	51.9	26.9	13.5
Below C	14.7	50.0	20.6	14.7
Ungraded	27.2	41.6	12.4	18.8
Total	18.5	44.2	18.7	18.6
10,000-99,999				
AA or A	37.7	39.1	14.6	8.6
B or C	5.1	57.0	20.2	17.7
Below C	9.1	45.4	27.3	18.2
Ungraded	50.0	28.4	9.7	11.9
Total	40.3	36.1	13.2	10.4
Under 10,000				
AA or A	35.5	41.3	13.2	10.0
B or C	8.9	35.7	33.9	21.4
Below C	*	*	*	*
Ungraded	35.1	36.0	11.2	17.7
Total	33.6	38.2	13.5	14.7
The Northeast				
AA or A	29.90	41.82	15.75	12.53
B or C	7.39	49.75	26.11	16.75
Below C	14.58	47.92	20.83	16.67
Ungraded	39.04	34.56	10.88	15.52
Total	31.56	39.96	14.75	13.73

*In these cases the data were too few to have any meaning but have been included in the totals in the table.

†New York City omitted.

much from ungraded eggs in this respect. About one-eighth of the egg lots of those who stated that they received A or AA were found to be below grade C. In New York City, nearly all the retailers stated they were receiving graded eggs. About 7 per cent of the lots found in New York City were below grade C, and 9 per cent were grade C, 43 per cent grade B and about 41 per cent grade A or better. Eggs in New York City graded considerably higher than those in any of the other city sizes.

[2]These figures are, however, on a U. S. consumer grade basis rather than a tabulation of the quality of each individual egg. The consumer grade gives the worse showing because an individual egg may lower the grade of the whole dozen in which it is included.

Of 1,464 lots sampled in the cities of 100,000 and over, 18.5 per cent graded A or better. There was a greater percentage of the ungraded lots actually found to be grade A than there was of the lots the retailers claimed to be grade A or AA when they received them. This also was true in the cities of 10,000 to 99,999, where 50 per cent of the ungraded lots were actually found to be grade A or AA. Only 37.7 per cent of the lots retailers stated they had bought as grade A actually were found by inspectors to be grade A.

In the Northeast 39 per cent of the ungraded lots were found to be grade A, whereas only 29.9 per cent of the lots the retailers believed to be grade A or better actually were grade A or better. However, there was a larger portion of lots of lower than grade C quality among the ungraded lots than there were in those believed to be grade A or AA.

When judged on the basis of U. S. Consumer grades, Table 6 shows that over three-fifths of the egg lots which the retailers stated they had purchased as eggs of specific quality were found to be of lower quality than the grade claimed at the time they were offered for sale to consumers. This discrepancy varied among the eggs coming from different areas. Many of the retailers used as a selling point the fact that they were selling "nearby" eggs. Actually these eggs did not measure up to quality claims made for them as well as out-of-state eggs. This does not mean that the out-of-state eggs were better; but relative to local eggs, they were better than the retailers believed. Generally, the eggs that came from out-of-state (but still from within the Northeast) more nearly measured up to the claims made for them.

Size of Eggs Sold

Table 7 shows that in the stores of the Northeast, more than two-thirds of the eggs were either Large or Extra Large. About 40 per cent of all eggs were in the Large class, 30.8 per cent in the Extra Large class and 4.5 per cent in the Jumbo. In the Northeast, other than New England, 84.2 per cent of the eggs were Large, Extra Large, or Jumbo. In New England, this percentage was only 45.1. There was a smaller percentage of Large eggs in New England than was found in the rest of the region. The typical class for New England was Medium and that for the rest of the region was Large. A former study showed that a greater percentage of the larger eggs in New England were sold to hatcheries.[3] It probably is true that the same size eggs go to the hatcheries in the rest of the Northeast, but hatcheries do not take so large a portion of the total

[3] "Regional Marketing Problems of the Hatching Egg Industry in the Northeast," Earl H. Rinear, Poultry Branch, Production and Marketing Administration, USDA, February, 1951.

Table 6. Relation of Actual Quality of Eggs Offered for Sale to Quality Claimed by Retailers by Source of Supply

Supply Area	Quality Found by Inspectors*		No. of Lots	2,870 Lots Studied
	Equal to or Higher than Quality Claimed by Retailers	Lower than Quality Claimed by Retailers		
	Per Cent	Per Cent		Per Cent
Nearby	33.8	66.2	1,694	59.0
Within the state	26.2	73.8	389	13.6
Northeast	47.8	52.2	610	21.3
Outside Northeast	36.4	63.6	110	3.8
Other	40.0	60.0	67	2.3
All areas	37.0	63.0	2,870	100.0

*On the basis of U. S. Consumer Grades.

Table 7. Per Cent of Eggs in Different Size Classes Used in Federal Standards for Individual Eggs—Based on All Lots Sampled

Egg Size for Individual Egg Based on Federal Standards*	Per Cent of Eggs at Retail Point		
	Northeast Other than New England	New England	Northeast
Jumbo	5.0	2.6	4.5
Extra Large	35.2	14.5	30.8
Large	44.0	28.0	40.6
Medium	10.9	38.3	16.7
Small	3.7	13.5	5.8
Peewee	1.2	3.1	1.6

*Although the trade terms is usually one of egg "sizes," the basis for classification is weight rather than size. Minimum weights, expressed in ounces per dozen, used for the classes were Jumbo 29, Extra Large 26, Large 23, Medium 20, Small 17 and Peewee 14. Standards for sizes varied among the states.

eggs produced. This does not affect the average size of eggs for table use as much as it does in New England. Two other factors also have been pointed out as possibilities for the high proportion of smaller eggs in New England retail stores in the late summer months. First, pullets had come into production and lowered the average size of eggs. Second, the heavy tourist trade at the time of the year may have drawn many of the larger eggs either directly from the farms to the tourists or into eating establishments. Thus, the larger eggs by-passed retail food stores.

Gross Margins on Eggs in Retail Stores of the Northeast

Differences Among Types of Stores

Gross margins in retail stores ranged from 0 to 25 cents per dozen. The average gross margin for all stores was 9.4 cents per dozen. Table

8 shows that about one-third of all stores other than chains had a gross margin of 10 cents per dozen.

For the independent stores, 10 cents per dozen was reported by about 34 per cent of the stores; for the voluntary chains, 10 cents per dozen was reported by 31 per cent of the stores; and for the chain stores, 6 cents per dozen was reported by 30 per cent of the stores. Thus, the most common margain in chain stores was 6 cents, compared with 10 cents in other stores.[4]

TABLE 8. GROSS MARGINS PER DOZEN EGGS REPORTED BY DIFFERENT TYPES OF STORES IN THE NORTHEAST

GROSS MARGIN PER DOZEN EGGS (CENTS)	STORES REPORTING MARGINS		
	INDEPENDENT	VOLUNTARY CHAIN	CHAIN
	PER CENT	PER CENT	PER CENT
Less than 5	3.7	2.5	8.9
5	7.1	9.0	13.3
6	5.3	4.5	30.0
7	6.5	5.7	7.8
8	9.4	10.2	6.7
9	8.0	7.4	5.6
10	33.7	31.4	11.1
11	5.5	7.7	6.7
12	7.5	6.1	2.2
13	4.7	4.9	0.0
14	3.0	4.5	3.3
15	2.7	3.7	0.0
16	1.1	.8	1.1
17	1.0	.4	1.1
18	.3	.8	1.1
19	.2	.0	0.0
20	.1	.4	0.0
More than 20	.2	0.0	1.1
Average gross margin	9.5	9.6	7.8
Actual Number of stores	1,891	245	90

[4]These margins do not necessarily cover the same service from one store to another, since some retail outlets furnish cartons and other services. In other stores these services may have been performed by the jobbers or wholesalers supplying these stores or may not have been provided for the consumers at all. For example, three-fourths of the eggs from chain store warehouses were received by the retailers in customer cartons; therefore, only in a minority of the chain stores are any cartoning costs included in the retail margins.

In many instances where no margin was charged for handling eggs, the store managers claimed that they performed this service as an accommodation to their customers. In other stores, where eggs were paid for "in trade," some retailers stated that they did not take a margin on both the eggs and the goods taken out in trade.

The gross margin of independent stores ranged from 0 to 25 cents and averaged 9.5 cents per dozen; voluntary chains ranged from 0 to 20 cents and averaged 9.6 cents per dozen. Chain stores ranged from 3 to 22 cents and averaged 7.8 cents.

Gross Margins on Different Sizes of Eggs

Table 9 shows that during the period in which this information was collected retailers in New England obtained a higher average gross margin per dozen for Jumbo eggs and Extra Large eggs than did the retailers in the rest of the Northeastern States. However, retailers in New England obtained a smaller margin per dozen for Medium, Small, and Peewee eggs than did retailers in the rest of the Northeast. In New England it was found that larger margins were directly associated with larger eggs. Table 7 shows that the supply of larger eggs was not proportionately as great in New England as in the rest of the Northeast. This seems a plausible explanation of the difference.

Table 9. Comparison of Gross Margin Per Dozen by Size of Eggs in Complete Food and Grocery Stores in New England and in the Northeast Other Than New England

Size Found by Graders on Individual Egg Basis	Gross Margins Per Dozen Eggs		
	Northeast Other than New England	New England	Northeast
	Cents	Cents	Cents
Jumbo	9.5	10.0	9.7
Extra Large	9.6	9.8	9.7
Large	9.7	9.5	9.6
Medium	9.7	9.0	9.6
Small	9.5	9.2	9.4
Peewee	8.7	8.2	8.6

In 1948, the spread between the prices farmers received for Large and unsized eggs was 8.6 cents in New England compared with 7.4 cents in the rest of the Northeast. This is evidence of higher premiums for large eggs in New England in the late summer or fall as compared with other Northeastern States.[5]

[5]These are the author's calculations from work reported in *Egg Marketing Channels and Methods Used by Northeastern Producers*, by O. C. Hester, Bureau of Agricultural Economics, USDA, Agricultural Information Bull. No. 69.

Some Marketing Functions and Practices of Retailers

Egg-Marketing Operations in the Store

Among the egg-marketing operations that might be performed in the retail store, placing the eggs in customer cartons was the most commonly found. Table 10 indicates that about one-fourth (25.8 per cent) of all the stores in the sample cartoned eggs in the retail store. Of all the stores, 2.1 per cent did both cartoning and candling, while 1.8 per cent candled only, and 1.2 per cent cleaned eggs. Only three-tenths of 1 per cent of the stores sorted eggs into size groups. None of the retailers interviewed stated that he sorted eggs for color. This, of course, does not mean that no retailer in the Northeast sorts eggs for color in the retail store, but it is certain that it is not very common or some of the stores in the sample would have performed this operation.

Table 10. Egg-Marketing Operations Performed in the Retail Stores Studied

Operation	Per Cent of All Stores Studied Performing the Operation in the Store
Cartoning	25.8
Both cartoning and candling	2.1
Candling only	1.8
Cleaning eggs	1.2
Sorting into sizes	.3
Candling and cleaning	.3
No operations performed	68.5

Cartons Available to Customers

About two-fifths (38.5 per cent) of the stores sold at least some of their eggs in paper bags. Table 11 shows that of all the eggs reported sold "previous week," 18.4 per cent had been sold in paper bags. Over one-half of the eggs were sold in the "long" 2 by 6 carton. This carton can be seen in Figure 1. The "non-divisible" carton, which cannot be broken into two half-dozens, accounted for 40.9 per cent of all the eggs. The "divisible," which can be broken into two half-dozens, accounted for 10.3 per cent. The "square" 3 by 4 carton was used in more stores than was the long carton, but it was used on offerings having smaller volume so that the square carton accounted for only 29.5 per cent of the eggs. This was fairly evenly divided between the pulp type (15.5 per cent) and the filler type (14 per cent). (See Figures 2 and 3.)

The type of container in which a retailer's customer takes eggs away from a store is evidently influenced by the type of container in which

TABLE 11. TYPES OF WHOLESALE CONTAINERS IN WHICH EGGS WERE RECEIVED BY THE STORE AND PERCENTAGE OF EGGS RETAILED IN VARIOUS TYPES OF CONTAINERS

WHOLESALE CONTAINERS	PERCENTAGE OF EGGS RETAILED IN DIFFERENT CONTAINERS					
	2 BY 6	2 BY 6 DIVISIBLE	3 BY 4 PULP	3 BY 4 FILLER	PAPER BAG	OTHER OR MIXED
Cartons*	75.0	15.0	3.3	3.8	.9	2.0
30 doz. wood	17.8	4.1	26.1	21.1	30.7	.2
30 doz. fiber	12.1	17.7	22.3	23.9	23.8	.2
Wood or fiber	28.7	1.2	21.7	17.3	31.0	.1
Baskets, boxes, pails	7.7	.0	8.6	12.5	71.2	.0
Other or mixed	44.8	4.2	21.8	15.6	13.6	.0
Total	40.9	10.3	15.5	14.0	18.4	.9

*These eggs were actually in one-dozen cartons when they reached the store, but the one-dozen cartons may have been in wholesale cases or other containers.

they reached the store. Of the eggs that were already cartoned when they reached the store, 90 per cent were sold in the 2 by 6 carton. This is to be expected because the 2 by 6 fits wholesale egg cases much better than the square cartons. Of the eggs that arrived at the store in baskets, boxes, or pails, over 70 per cent were retailed in paper bags, less than 8 per cent in the 2 by 6 carton. Apparently, the stores that buy loose

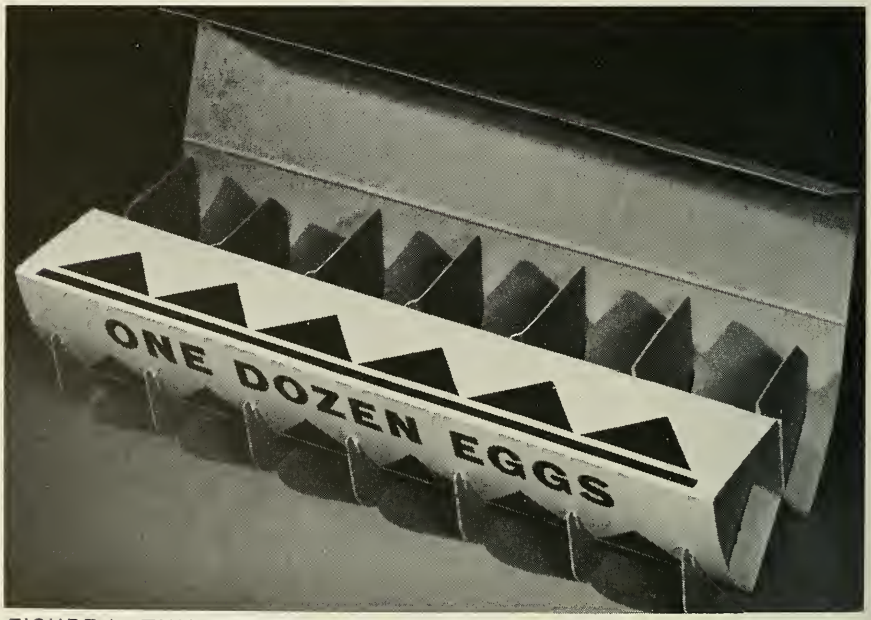

FIGURE 1. THIS IS THE "long" carton. It contains two rows with six eggs in each row. Another type of long carton is perforated in center so that it can be broken into two half dozens.

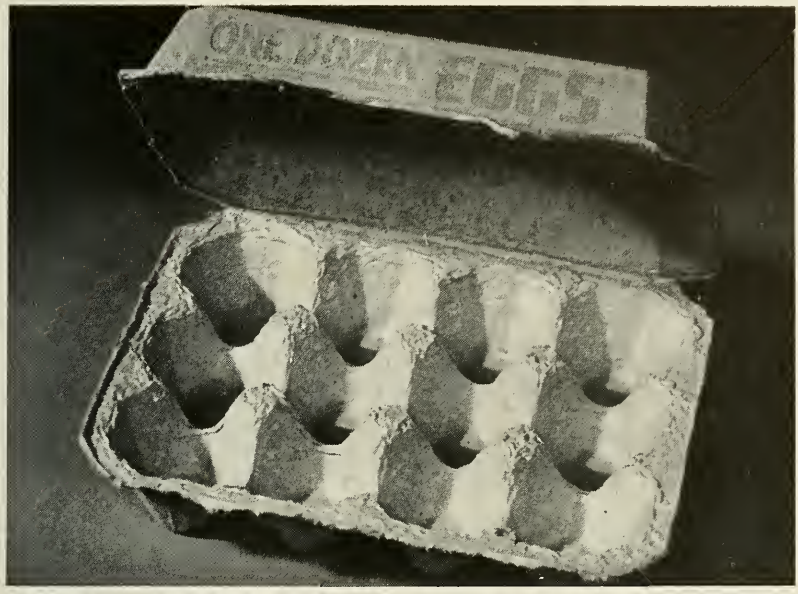

FIGURE 2. "SQUARE" type carton with three rows of four eggs in a row. It is of a heavy pulp paper molded in a manner that makes a cup for each egg.

FIGURE 3. ANOTHER TYPE of "square" carton. This carton is made of relatively thin paper and the partitions (filler) between the eggs are inserted into the carton.

eggs in wholesale containers and do their own cartoning are more likely to use the square carton rather than the long carton.

The container in which eggs were retailed was related to the type of supply the retailer had. Table 12 reveals that if the eggs had come from a chain store warehouse, all of the eggs were retailed in cartons (96.2 per cent in the 2 by 6 carton and 3.8 per cent in the square carton). Of the eggs that had come from a huckster, only 8.5 per cent were retailed in the long carton. Over three-fifths of these were retailed in paper bags. Of the eggs that had come directly from farmers or farmers' markets, only slightly more than one-tenth were retailed in the long carton, nearly one-half in square cartons, and over two-fifths in paper bags.

TABLE 12. SOURCE OF RETAILER'S EGG SUPPLY AND TYPE OF CONTAINER IN WHICH EGGS ARE RETAILED

SOURCE OF RETAILERS EGG SUPPLY	CONTAINERS IN WHICH EGGS ARE RETAILED		
	2 BY 6 TYPE CARTON	3 BY 4 TYPE CARTON	PAPER BAG
	PER CENT OF TOTAL*		
Farmers or farmers' market	11.0	47.8	41.2
City wholesalers	36.5	35.3	28.2
Chain store warehouse	96.2	3.8	.0
National wholesalers†	61.8	17.0	21.2
Wholesale cooperative warehouse	88.7	5.6	5.7
Cooperative or other auctions	75.7	15.3	9.0
Dairy companies	71.8	13 2	15.0
Hucksters, peddlers, etc.	8.5	29.8	61.7
Country wholesalers	28.7	45.8	25.5
Other and mixed sources	13.1	32.6	54.3
All Sources	45.4	29.5	25.1

*These are the percentages of the number of lots that were received from the type of supplier.

†These were mostly meat packers.

Table 13 shows that only 14.5 per cent of the egg lots that retailers had received directly from farmers or farmers' markets were in dozen cartons at the time they arrived at the store. Over one-eighth of the lots that had come from farmers or farmers' markets had arrived at the retail stores in baskets, boxes, or pails. This is in direct contrast with the lots that had come from national wholesalers, chain store warehouses, or wholesale cooperative warehouses, none of which had arrived in baskets, boxes, or pails. It also seemed to be the case that those wholesalers who did more cartoning were more likely than other types of suppliers to use the fiber case rather than the wooden case.

TABLE 13. CONTAINERS IN WHICH EGG LOTS REACHED THE RETAIL STORE BY SOURCE OF SUPPLY

SOURCE	CONTAINERS					
	WHOLESALE EGG CASES				BASKETS, BOXES OR PAILS	MIXED, OTHER, OR UNKNOWN
	DOZEN CARTONS*	WOODEN	FIBER	EITHER WOOD OR FIBER		
	PER CENT	PER CENT	PER CENT	PER CENT	PER CENT	PER CENT
Farmers and Farmers' markets	14.5	41.7	22.0	7.7	12.7	1.4
City wholesalers	28.6	33.3	28.4	8.0	.6	1.1
Chain store warehouse	74.9	8.7	5.8	9.0	.0	1.6
National wholesalers**	54.2	25.1	16.1	3.8	.0	.8
Wholesale cooperative warehouse	67.9	6.3	6.3	11.9	.0	7.6
Cooperative or other auctions	48.7	21.5	16.0	10.1	2.8	.9
Dairy companies	49.0	17.0	13.2	5.7	7.5	7.6
Hucksters, peddlers, etc.	11.8	42.2	10.0	28.1	4.0	3.9
Country wholesalers	33.3	21.9	16.0	26.1	2.5	1.1
Other and mixed sources	19.0	26.2	4.8	28.6	14.3	7.1
All sources†	37.7	28.5	18.4	8.7	5.0	1.7

*These eggs were actually in one-dozen cartons when they reached the store but the one-dozen cartons may have been in wholesale cases or other containers.

**These were mostly meat packers.

†These were adjusted by the average dozens per lot from each type of supplier.

Types of Suppliers and Deliveries

Ranked by order of importance, the retailers' source of eggs were: farmers and farmers' markets, city wholesalers, and chain store warehouses. Table 14 indicates that over one-third of the eggs had come from farmers or farmers' markets and over one-fourth from city wholesalers. Less than 2 per cent of the eggs had come from cooperative or other egg auctions directly to the retail store. At the time of the survey only 9.1 per cent of the eggs had come directly from country retail stores. This probably does not represent what happened at other times during the year. Many of the country stores did not have enough eggs to meet their own demands at the time of this survey. At other times of the year, when the country retail stores receive more eggs, they sell their surplus to other stores or wholesalers.

For the eggs in chain stores that had came through the chain store warehouses, receipts averaged 146.8 dozen per lot "previous week." Since chain stores averaged more than two lots each, the average receipts per chain store were more than twice as great as the average per lot. Eggs that had come from cooperative auctions or other auctions were next

Table 14. Receipts of Eggs in the Sample of Retail Stores by Type of Supplier and Average Number of Dozen Per Lot

Supplier	Number of Lots Received	Average No. of Dozen Per Lot	Total No. of Dozens Received	Per Cent of Total Eggs Received
Farmers and farmers' markets	1,939	46.2	89,665	34.4
City wholesalers	1,262	56.1	70,854	27.1
Chain store warehouse	423	146.8	62,086	23.8
National wholesalers*	246	54.4	13,389	5.1
Wholesale cooperative warehouse	109	77.0	8,388	3.2
Cooperative auctions or other auctions	43	101.4	4,359	1.7
Dairy company	49	83.4	4,089	1.6
Hucksters, peddlers, etc.	56	49.2	2,757	1.1
Country wholesalers	14	88.6	1,240	.5
Other and Mixed sources	72	57.6	4,150	1.5
Total or average	4,213	61.9	260,977	100.0

*These were mostly meat packers.

in volume of receipts. They averaged 101.4 dozen per lot. Eggs received through country wholesalers averaged 88.6 dozen per lot, whereas those supplied by city wholesalers averaged 56.1 dozen per lot. The smallest receipts were in lots produced by the retailer's own flock.

Frequency of egg delivery by suppliers varied among the three most common types of stores retailing eggs—complete food stores, groceries, and general merchandise stores. Table 15 shows that the eggs examined for the complete food stores, on the average, had been in the store 2.7 days at the time of examination. Eggs in groceries had been there longer, averaging 3.3 days. Ordinarily it might be expected that the turnover in the general merchandise store would be slower than the other two types. For eggs, this evidently was not true because the 310 lots examined in this class of store had been in the store for an average of 2.4 days, which is considerably less than for the other types. One-half of the groceries received eggs once a week and about a third received them twice a week. Less than 1 per cent of the complete food stores and none of the general merchandise stores received eggs less than once a week. One-eighth of the complete food stores received eggs more often than three times a week.

How often a store receives eggs depends somewhat on its source of supply. From Table 16 it appears that eggs received directly from chain store warehouses were received about twice as often as those received from other major sources of supply. Stores that received eggs directly from wholesale cooperative warehouses were next in having most frequent

egg deliveries. Eggs that had come directly to stores from hucksters were delivered less frequently than from any of the other sources. In general, there is relatively little difference in this respect among the other types of suppliers.

TABLE 15. FREQUENCY OF RECEIPT OF EGGS BY TYPE OF STORE

FREQUENCY OF RECEIPT	COMPLETE FOOD		GROCERIES		GENERAL MERCHANDISE		ALL STORES	
	NO. OF LOTS	PER CENT OF LOTS	NO. OF LOTS	PER CENT OF LOTS	NO. OF LOTS	PER CENT OF LOTS	NO. OF LOTS	PER CENT OF LOTS
More often than 3 times a week	321	12.4	65	5.1	32	10.3	418	10.0
Three times a week	400	15.4	148	11.5	39	12.6	587	14.0
Twice a week	862	33.2	408	31.7	125	40.3	1,395	33.3
Once a week	987	38.1	644	50.1	114	36.8	1,745	41.7
Less often than once a week	23	.9	20	1.6	0	0	43	1.0
Total	2,593	100.0	1,285	100.0	310	100.0	4,188	100.0
Average number of days between deliveries	4.5		5.2		4.3		4.7	
Average number of days since eggs on hand reached the store	2.7		3.3		2.4		2.9	

TABLE 16. FREQUENCY OF EGG DELIVERY BY TYPE OF SUPPLIER

SUPPLIER	AVERAGE AMOUNT OF TIME BETWEEN DELIVERIES (DAYS)
Hucksters, peddlers, etc.	5.8
National wholesalers*	5.5
Farmers and farmers' markets	5.0
City wholesalers	4.9
Country retail store	4.8
Dairy companies	4.8
Cooperative auctions or other auctions	4.5
Country wholesalers	4.4
Wholesale cooperative warehouse	3.3
Chain store warehouse	2.7
Mixed sources	3.2

*These were mostly meat packers.

Egg Refrigeration in Retail Stores

There is virtually unanimous agreement among those who have studied methods of retaining egg quality that refrigeration is extremely helpful and that the rate of quality deterioration is relatively low for eggs under proper refrigeration. It was not within the scope of this study to determine the effects of refrigeration, which are well established, but rather to learn how refrigeration is applied in retail stores.

Where farmers market eggs directly to consumers or to retail stores, and the rate of turnover in the retail store is high, refrigeration is of less importance in getting high quality eggs to the consumer. Where the eggs pass through a number of handlers between the farm and the consumer and the time between the sale at the farm and sale to the consumer is great, temperature control becomes of considerable importance in maintaining the quality of eggs. Under these conditions, practical considerations do not make it economically possible to maintain all eggs at the highest quality. It becomes necessary, therefore, to find market outlets for eggs of the lower quality grades that serve equally well for baking purposes. Research studies indicate that the larger stores in the urban communities, by the use of adequate price differentials and other methods, have developed a market for several grades of eggs, and are in a position to handle the lower grades in such volume and under such conditions that the quality sold is satisfactory to their customers.

Of the egg lots examined, 57 per cent were found under refrigeration in the retail store and 43 per cent were not under refrigeration. The per cent of egg lots under refrigeration varied with the type of store. Table 17 shows that in complete food stores, 61 per cent of the lots were under refrigeration. The other two of the most important types

Table 17. Variation in Proportion of Eggs Under Refrigeration and not Under Refrigeration by Type of Store

Type of Store (By Products Handled)	Egg Lots Studied	Lots Under Refrigeration	Lots Not Under Refrigeration
	Number	Per Cent	Per Cent
Meat markets	105	75	25
Complete food	2,394	61	39
Delicatessen	119	59	41
Groceries	1,044	50	50
General merchandise	270	49	51
Fruits and vegetables	42	48	52
Dairy products	32	44	56
Other	39	33	67
Total or Average	4,045	57	43

of stores retailing eggs, grocery and general merchandise stores, had approximately half of the lots under refrigeration. Of all types of stores, the meat markets had the largest percentage of the egg lots under refrigeration.

Contrary to what might have been expected without further analysis, eggs that were held at room temperature in non-display holdings in the store were generally better than those held under refrigeration. For those lots held under refrigeration, 8.9 per cent of the individual eggs were found to be grade AA compared with 11.7 per cent of those held at room temperature. Table 18 shows that in the refrigerated lots, 64.8 per cent were grade A or better compared with 69.4 per cent of those held at room temperature. The percentage of grade C eggs or lower quality was greater for lots under refrigeration than those at room temperature in non-display holding in the retail store.

Eggs under refrigeration while on display averaged considerably better in quality than those displayed at room temperature. Table 18 embraces 1,940 different egg lots claimed by retailers to be of grade A quality. It shows that 9.1 per cent of the eggs under refrigeration in both non-display and display positions were grade AA, compared with 7.2 per cent of the eggs held under refrigeration in non-display holding but displayed at room temperature. For eggs held at room temperature in non-display, those that were put under refrigeration while on display contained 19.8 per cent grade AA compared with 11 per cent of those displayed at room temperatures. Comparisons of grade A plus AA show the same general relationships—eggs in refrigeration while on display were generally of higher quality when they were offered to the stores' customers.

Table 18. Egg Quality Determined by Inspectors for Eggs Claimed To Be Grade A by the Retailers and Whether Eggs Were Held Under Refrigeration in Non-display Position and in Display Position in the Store

Individual Egg Quality	Eggs Refrigerated in Non-Display Holding			Eggs at Room Temperature in Non-Display Holding		
	Display			Display		
	Refrigerated While on Display	Not Refrigerated While on Display	Total	Refrigerated While on Display	Not Refrigerated While on Display	Total
AA	9.1	7.2	8.9	19.8	11.0	11.7
A	56.0	52.1	55.9	55.7	57.7	57.7
B	27.7	33.5	28.0	19.4	25.3	24.7
C	2.6	3.3	2.6	1.1	2.1	2.0
Below C	4.6	3.9	4.6	4.0	3.9	3.9

Although all the lots embraced in Table 18 were claimed to be grade A, there may have been a difference in quality when the eggs had arrived at the store. An inverse relationship was found between the number of checks plus leakers and the percentage of eggs of grade A or better quality. In general, it is believed that proper refrigeration does not affect the number of checks and leakers. The number of checks and leakers is more likely related directly to the number of times eggs have been handled. The percentage of checks and leakers was slightly higher for eggs kept under refrigeration in non-display positions. This suggests that the eggs were of lower quality when they arrived at the store.

Not only was it likely that the lots of eggs held under refrigeration were of lower quality when they reached the store, but it was possible that these lots had been held longer in the stores. This is borne out in Table 2 in the Appendix. The average number of days that all refrigerated lots had been in the store was 2.87 compared with 2.58 for all the non-refrigerated lots. Figure 4 shows that the refrigerated lots had been in the store approximately the same length of time regardless of the quality of the eggs. This indicates that in the refrigerated lots there was no direct relationship between the quality of the eggs and the amount of time the eggs had been in the store. In the non-refrigerated lots, the results were entirely different. Eggs that graded either A or AA had been in the store only an average length of 2.37 days. Eggs grading B and C had been in the store 2.53 and 2.69 days, respectively. In general, this was true of all types of handling where eggs were not under refrigeration. The decrease in quality with added holding time in the store was especially noticeable in the lots that were removed from refrigeration while they were on display.

Retailers' Response to Weight Standards in Grade Requirements

According to a recent report, thirty states in the United States have minimum weight standards on individual eggs in a dozen of Large eggs and twenty-nine states have a minimum on the weight of individual eggs in a Medium dozen.[6] Nine of the twelve states of the Northeast impose such minimum weights. The three states of the Northeast that did not do so at the time of the survey were Delaware, New York, and West Virginia.

About one-seventh (14 per cent) of all lots sampled had smaller eggs than were claimed for them. This comparison of size was based on Federal requirements for the total dozen weight.

[6]"Variations in State Standards and Grades for Eggs," Pond, Reis F., and Alfred W. Otte, Production and Marketing Administration, USDA, April, 1950.

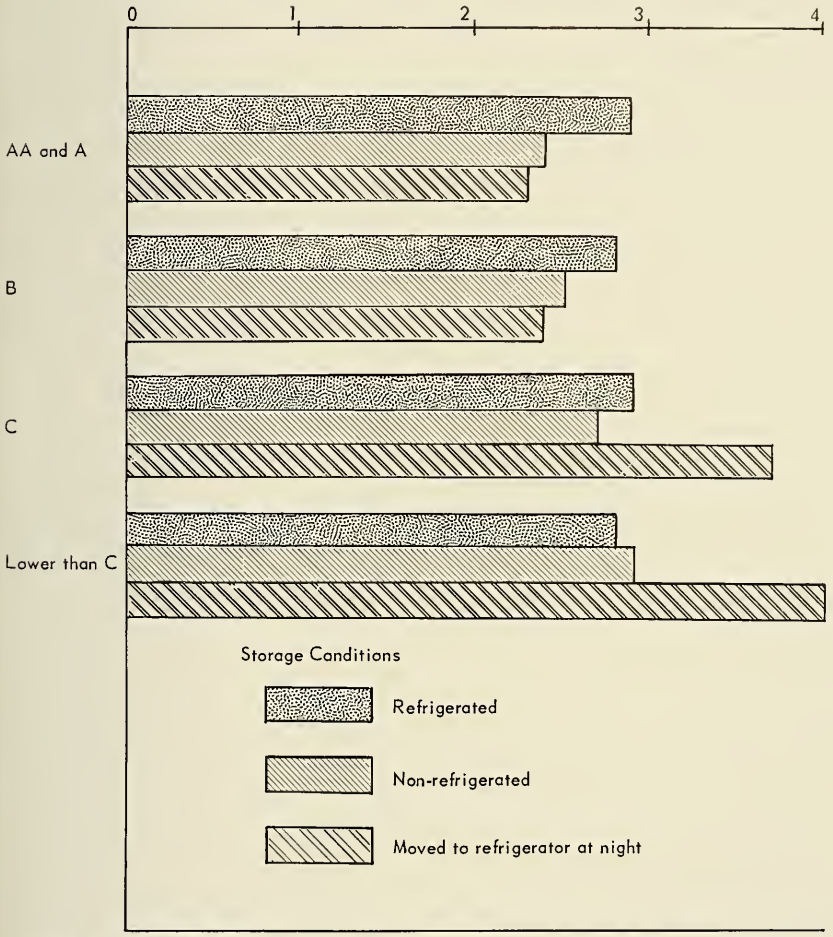

FIGURE 4. GRADE FOUND in relation to number of days lots of eggs were kept in stores of the Northeast by the refrigeration practices.

Table 19 shows a comparison of the relationship of the actual weights and the weights claimed by retailers when the comparison is based on the total weight per dozen and also on the individual egg weights. There is, of course, a direct relationship between the two, but it is far from perfect. When weights were based on the minimum weight standards for individual eggs, 18.1 per cent of the eggs were smaller and 6.3 per cent were larger than what was claimed for them; when weights were based on dozen weights, 14 per cent of the lots were smaller and 10.5

per cent were larger than what was claimed for them. Since most of the retailers were not claiming to use Federal standards, they were not violating such standards but merely using trade terms—even though they might be confused with Federal or state standards with which they are not in accord.

Table 19. Retailers Statements on the Weights of the Eggs They Were Selling Compared With Federal Standards

Actual Weight Compared With Retailer's Claim	Using the Federal Dozen Weight Standard (All Lots)	Using the Federal Standards for the Weight of Individual Eggs (All Lots)
	Per Cent	Per Cent
Smaller	14.0	18.1
Same	75.5	75.6
Larger	10.5	6.3

It is fairly evident that many egg dealers either do not have equipment that is precise enough to meet the requirements for individual egg weights or are not seriously concerned about the weight of the individual egg if the total dozen comes up to standard. The smaller dealer or the producer probably cannot afford to meet the requirements for individual egg weights.

Price

Retail egg prices were generally higher in New York City than in the other areas of the Northeast. (See Table 3 Appendix.) The price of Medium eggs averaged about 15 per cent lower than the price of Extra Large in New York City. In other cities of populations of over 100,000 the difference between these two cities was not as great. In cities of less than 5,000 people, the percentage difference between these two sizes was approximately the same as in New York City, and the price of Large eggs held about the same relationship as in New York City.

Table 20 shows that in the retail stores of the Northeast the average price per pound for Large eggs was 50.6 cents. This was higher than for any of the other size classes. Eggs either smaller or larger than Large were less per pound. It appears that the further they were removed from the Large the better the buy. Mediums were 2.4 cents a pound less than Large; Smalls were 2.2 cents per pound less than Mediums, and Peewees were 2.4 cents per pound less than Smalls. The relationship is quite consistent and hints that it is not likely the result of chance causes. These were the price discrepancies, on a per pound basis, that existed in

July, August, and September of 1949. This situation may have been peculiar to that particular time. It hints, however, that retailers and consumers might gain by a more careful scrutiny of the price-value relationships among the different sizes of eggs. It also suggests further research.

TABLE 20. PRICE PER DOZEN AND PER POUND OF EGGS IN DIFFERENT SIZE GROUPS IN RETAIL STORES OF THE NORTHEAST, SUMMER 1949*

SIZE GROUP	APPROXIMATE WEIGHT (OUNCES PER DOZEN)	AVERAGE PRICE (CENTS PER DOZEN)	AVERAGE PRICE (CENTS PER POUND)
Jumbo		86.8	—
Extra large	27.5	83.3	48.5
Large	25.5	80.6	50.6
Medium	22.5	67.8	48.2
Small	19.5	56.1	46.0
Peewee	16.5	45.0	43.6
Pullet	—	54.2	—

*These are the sizes retailers claimed they were selling. It appeared that 12.1 per cent had smaller eggs than they claimed, but no adjustment was made for that in this table.

Some Factors Studied in Relation to Egg Sales

EGG ADVERTISING

Of all the stores in the regional sample where it could be determined, about one-eighth of the retailers stated that they advertised eggs with cards, posters, or in newspapers. Of the group of smallest stores 4.4 per cent advertised eggs; 8.5 per cent of the stores with gross sales between $500 and $1,500 advertised, and 31.3 per cent of the stores with gross sales of more than $1,500 advertised. In general, the larger the store the more likely it was to advertise eggs regardless of the type of store. However, a larger proportion of the complete food stores advertized than did the groceries. From the data available, no conclusive evidence was drawn for determining what effects different methods of advertising had on egg sales.

CUSTOMER CHOICE

One of the factors that seems to be associated with the number of eggs sold by a retail store is the number of different offerings available to the customer.[7] Figure 5 shows that in general the stores with the

[7]The offerings had to do with the selection available to customers. If the customer had a choice between different groups of eggs there was more than one offering in the store. A group of eggs may have appeared different because of such factors as price, quality claims, size, color, carton, brand, or dating. These were the most common differences found. There may have been others such as giving the source of the eggs, whether they were shell treated, whether they had been held in storage, etc. In fact, anything that would distinguish any group of eggs to a customer was used as a basis for calling it a separate offering.

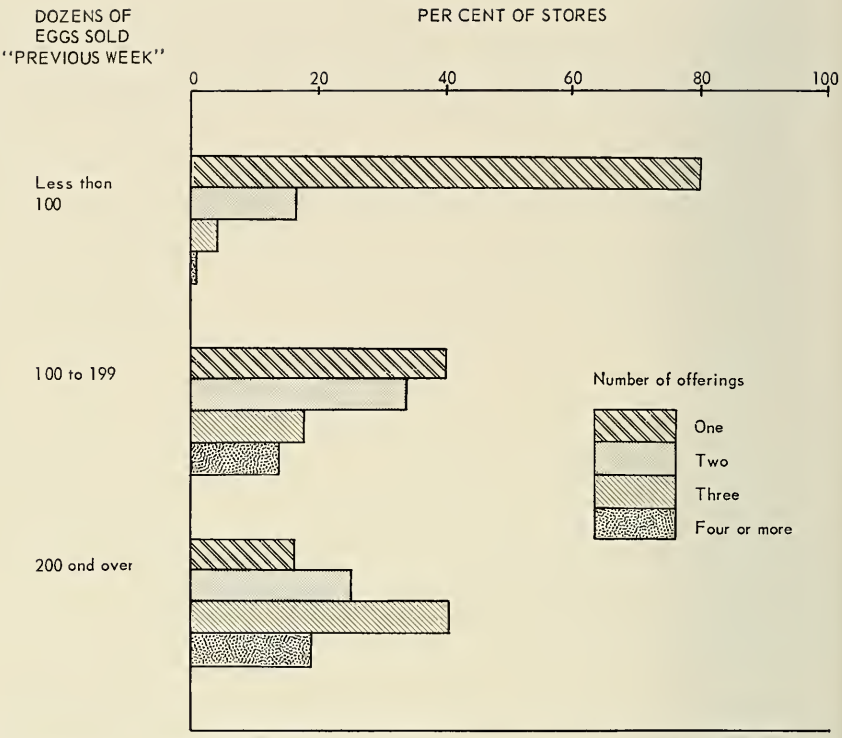

FIGURE 5. NUMBER of egg offerings and volume of egg sales in retail stores.

larger volume of egg sales had more than one egg offering available to the customer. Table 21 shows that not only was it general that the egg sales in the store increased with the number of offerings, but the number of dozens sold per $100 of gross also increased. The stores that had only one offering averaged 4.6 dozen per $100 gross sales. Stores with two or three offerings averaged 5.5, and those with four or more averaged 8.6 dozen.

TABLE 21. NUMBER OF EGG OFFERINGS AND VOLUME OF SALES

NUMBER OF DIFFERENT EGG OFFERINGS IN THE STORE	AVEVAGE DOZENS OF EGGS SOLD "PREVIOUS WEEK"	AVERAGE GROSS DOLLAR VOLUME OF BUSINESS PER STORE "PREVIOUS WEEK"	NUMBER OF DOZEN EGGS SOLD PER $100 GROSS "PREVIOUS WEEK"
1	47.6	1,026	4.6
2	100.0	1,830	5.5
3	239.0	4,381	5.5
4 or more	466.3	5,271	8.6

Of the stores from which information was obtained on the number of dozen eggs sold, the number of different types of offerings, and the gross dollar volume, 73.2 per cent had only one offering in the store. This varied considerably with the size of the store. Table 22 shows that of the stores that sold less than 100 dozen eggs "previous week," 80.2 per cent had only one offering; in stores that sold 100 to 199 dozen, 39.6 per cent had only one offering; and of those that sold 200 dozen or more, 16.2 per cent had only one offering. Only 4.1 per cent of the stores that sold less than 100 dozen had as many as three offerings in the store. This proportion increased to 26.7 per cent for stores that sold 100 to 199 dozen and to 59 per cent for those that sold 200 dozen or more weekly. Over five-sixths of the stores that sold more than 200 dozen "previous week" had more than one offering of eggs for sale.

TABLE 22. NUMBER OF EGG OFFERINGS IN 2,154 RETAIL STORES CLASSED BY THE RATIOS OF EGG SALES TO TOTAL SALES AND THE EGG VOLUME

DOZENS OF EGGS SOLD PER $100 GROSS SALES	DOZEN OF EGGS SOLD PER STORE "PREVIOUS WEEK"	PERCENTAGE OF STORES THAT HAD THE FOLLOWING NUMBER OF EGG OFFERINGS				
		ONE	TWO	THREE	FOUR	FIVE
Less than 5	Less than 100	83.5	13.1	3.1	0.3	....
Less than 5	100-199	53.7	12.2	21.9	9.8	2.4
Less than 5	200 and over	20.0	25.0	50.0	5.0	....
5 to 9.9	Less than 100	78.8	17.3	3.3	0.6	....
5 to 9.9	100-199	36.6	31.7	28.0	3.7	....
5 to 9.9	200 and over	9.1	13.6	45.5	22.7	9.1
10 and over	Less than 100	74.9	18.6	6.5	....	....
10 and over	100-199	35.4	46.8	5.1	3.8	8.9
10 and over	200 and over	17.5	28.6	34.9	19.0	....
Total number of stores	Less than 100	80.2	15.7	3.8	0.3	....
	100-199	39.6	33.7	17.8	4.9	4.0
	200 and over	16.2	24.8	40.0	17.1	1.9
	All stores	73.2	17.8	6.9	1.6	0.5

Whether egg sales are increased by the number of offerings, or the number of offerings is increased because the store is able to sell more eggs is impossible to determine from this survey. It is definite that the two are directly associated, especially up to as many as three or four offerings. There also seems to be a definite relationship between the amount of the store's business accounted for by eggs and the number of egg offerings for sale in the store.

Of the stores that had only one offering, 44.4 per cent sold less than 5 dozen eggs per $100 gross, 37.8 per cent sold from 5 to 9.9 dozen per $100 gross, and 17.8 per cent sold 10 or more dozen per $100 gross. (See Table 4, Appendix.) Only 17.8 per cent of the stores having one offering sold 10 or more dozen per $100 gross compared with 30 per cent of the

stores with two offerings, 31.8 per cent with three offerings, and 44.1 per cent with four offerings. Of the stores that had five offerings, 70 per cent sold 10 or more dozen per $100 gross, but this may not be conclusive because in the sample there were only 10 stores having five offerings.

Use of Brands on Eggs

It was very difficult to measure the effect of using brands on eggs in retail stores. In 1,446 stores in which the effect was studied only 239 (14.5 per cent) of the stores sold eggs in branded cartons. Only in the larger stores in the larger cities did there seem to be a difference in sales that might be attributed to brands. This should not be interpreted to mean that brands are not effective in other places; rather, it was impossible to ascertain the effects because there was so much variation from one store to another and from one city size to another.

Poultry Products Available in Stores

Approximately seven-eighths of the stores in which schedules were taken had shell eggs on hand at the time of the interview. Of the 12 per cent that did not have eggs on hand, about one-fourth (3 per cent of all stores) handle eggs when they are available but the other three-fourths usually do not.

Less than 2 per cent of the stores in the Northeast had dried eggs on hand at the time of the interview. (See Table 5, Appendix.) Many retailers stated that they did not know where dried eggs could be obtained.

Poultry meats were sold in a great variety of forms in the retail stores. The two most common forms were either New York dressed or frozen poultry.[8] New York dressed turkeys were sold in 8.5 per cent of the stores at the time of the interview. An equal number of stores indicated that they handled them for holidays. Less than 1 per cent of the stores had live poultry and less than 6 per cent had cut-up chicken on hand. No additional stores reported that they would have live birds on hand either for holidays or when they were available.

Although almost one-fourth of the stores reported that they had frozen poultry on hand at the time of the interview, only 5.9 per cent had frozen chicken parts. This percentage varied considerably among different types of stores. Almost 10 per cent of the complete food stores sold this item, while only 1 per cent of the groceries sold frozen chicken

[8]New York dressed means that the bird has been killed, bled, and the feathers removed.

parts. Only 4 per cent of the meat markets had frozen chicken parts on hand compared to 5.9 per cent for all types of retail food stores. Of the different parts of the chicken, breasts were more commonly sold than were other parts. Less than 1 per cent of the stores sold frozen wings and backs.

TABLE 1. RELATION OF ACTUAL WITH CLAIMED QUALITY OF EGGS SOLD BY STORES WITH ONE LOT OF EGGS BY SIZE OF STORE

DOLLAR VOLUME OF BUSINESS PER STORE "PREVIOUS WEEK" AND ACTUAL QUALITY OF EGGS OFFERED FOR SALE (U. S. CONSUMER BASIS)	STORES THAT CLAIMED TO BUY GRADE A OR BETTER EGGS		STORES THAT DID NOT CLAIM TO BUY GRADE A OR BETTER EGGS		ALL STORES	
	PER CENT STORES	PER CENT DOZENS*	PER CENT STORES	PER CENT DOZENS*	PER CENT STORES	PER CENT DOZENS*
Less than $500						
AA or A	13.7	17.7	18.6	15.1	15.1	16.8
B	46.1	45.3	36.4	42.8	43 3	44.5
C	23.8	22.3	24.3	24.9	24.0	23.2
Below C	16.4	14.7	20.7	17.2	17.6	15.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
$500-$1,499						
AA or A	19.6	21.3	13.5	15.7	17.7	19.6
B	43.8	43.4	39.5	38.0	42.5	41.8
C	18.0	18.1	25.5	25.8	20.3	20.4
Below C	18.6	17.3	21.5	20.5	19.5	18 2
Total	100.0	100.0	100.0	100.0	100.0	100.0
$1,500 and over						
AA or A	18.9	24.7	24.0	18.6	20.1	23.0
B	47.5	50.0	38.0	33.5	45.2	45.3
C	15.7	12.8	18.3	31.8	16.3	18.2
Below C	17.9	12.5	19.7	16.1	18.4	13.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

*Since in the U S. Consumer basis the grade of the whole dozen may be determined by the individual egg of the lowest or next lowest quality, these figures are dozens rather than eggs. For this reason, a percentage distribution of egg quality will indicate lower quality for a given lot of eggs than would a compilation of the quality of individual eggs.

Table 2. Length of Storage of Eggs by Grade and Type of Refrigeration

Type of Egg Storage	Average Number of Days Eggs Kept and Grade Found				
	AA & A	B	C	Lower than C	Average of All Lots
Refrigeration					
All lots	2.89	2.85	2.91	2.85	2.87
Non-refrigeration					
All lots	2.37	2.53	2.69	2.89	2.58
Stored in basement	2.19	3.16	3.46	2.81	2.98
Moved to refrigerator at night	2.29	2.43	3.66	4.00	2.84
Other than stored in basement	2.39	2.45	2.63	2.89	2.54
Other than moved to refrigerator at night	2.37	2.54	2.70	2.83	2.57
Other than stored in basement or night refrigeration	2.39	2.45	2.57	2.83	2.52

Table 3. Absolute and Relative Prices of Three Sizes of Eggs by Size of City

City Size and Egg Size	Price Per Dozen	Price of Medium and Large Compared to Extra Large	Price of Eggs Compared with Same Size in New York City
	Cents	Per Cent	Per Cent
New York City			
Extra large	89.9	100.0	100.0
Large	83.9	93.3	100.0
Medium	76.3	84.9	100.0
500,000 and over*			
Extra large	80.9	100.0	90.0
Large	79.4	98.1	94.7
Medium	75.1	92.8	98.3
100,000-499,000			
Extra large	79.6	100.0	88.6
Large	79.2	99.4	94.4
Medium	72.9	91.6	95.5
25,000-99,999			
Extra large	83.6	100.0	93.0
Large	77.7	92.9	92.7
Medium	72.7	87.0	95.3
10,000-24,999			
Extra large	83.6	100.0	93.0
Large	78.9	94.3	94.1
Medium	70.7	84.6	92.6

Table 3 (Concluded)

City Size and Egg Size	Price Per Dozen	Price of Medium and Large Compared to Extra Large	Price of Eggs Compared with Same Size in New York City
	Cents	Per Cent	Per Cent
5,000-9,999			
Extra large	80.0	100.0	89.0
Large	77.7	97.1	92.6
Medium	72.8	91.0	95.4
2,500-4,999			
Extra large	77.9	100.0	86.6
Large	72.7	93.3	86.6
Medium	67.7	86.9	88.6
Less than 2,500			
Extra large	80.1	100.0	89.2
Large	74.4	92.9	88.8
Medium	69.6	86.9	91.2

*This does not include New York.

Table 4. Relation of Number of Lots of Eggs Per Store to Ratio of Egg Sales to Gross Sales by Size of Store

Lots of Eggs Per Store	Dozens of Eggs Sold Per $100 Gross Sale	Dozen Eggs Sold Per Store "Previous Week"			
		Less than 100	100-199	200 or More	Total
		Per Cent	Per Cent	Per Cent	
1	less than 5	45.5	27.5	23.5	44.4
	5 to 9.9	38.2	37.5	11.8	37.8
	10 and over	16.3	35.0	64.7	17.8
	Total	100.0	100.0	100.0	100.0
2	less than 5	36.5	7.4	19.2	30.2
	5 to 9.9	42.8	38.2	11.5	39.8
	10 and over	20.7	54.4	69.3	30.0
	Total	100.0	100.0	100.0	100.0
3	less than 5	35.7	25.0	23.8	29.7
	5 to 9.9	34.3	63.9	23.8	38.5
	10 and over	30.0	11.1	52.4	31.8
	Total	100.0	100.0	100.0	100.0
4	less than 5	33.3	40.0	5.5	20.6
	5 to 9.9	66.7	30.0	27.8	35.3
	10 and over	....	30.0	66.7	44.1
	Total	100.0	100.0	100.0	100.0
5	less than 5	....	12.5	....	10.0
	5 to 9.9	....	....	100.0	20.0
	10 and over	....	87.5	....	70.0
	Total	....	100.0	100.0	100.0

Table 5. Poultry and Poultry Products Handled in 3,720 Retail Stores of the Northeast, Summer of 1949

Item	Number of Retailers Stating They Handled These Items at a Given Time of Year		
	Had on Hand at Time of the Interview	Have on Hand for Holidays Only	When Item Is Available
	Per Cent	Per Cent	
Shell eggs	87.8	.0	3.0
New York dressed chicken	24.2	.5	2.0
Frozen packaged poultry	23.6	.1	.3
Drawn Chicken	10.2	1.0	3.1
New York dressed turkeys	8.5	8.4	.9
Cut-up chicken	5.7	.9	.5
Drawn turkey	3.1	6.6	.9
Cut-up turkey	2.0	.4	.2
Dried eggs	1.9	.0	.2
Live poultry	.6	.0	.0